

TITLE: ENDOVASCULAR CRYOTREATMENT CATHETER

ABSTRACT OF THE DISCLOSURE

1 An elongated catheter device with a distal balloon assembly is adapted for
endovascular insertion. Coolant injected through the device may, in different
embodiments, directly cool tissue contacting the balloon, or may cool a separate
internal chamber. In the first case, the coolant also inflates the balloon, and spent
coolant is returned to the handle via a return passage extending through the body
6 of the catheter. Plural balloons may be provided, wherein a secondary outer
balloon surrounds a primary inner balloon, the primary balloon being filled with
coolant and acting as the cooling chamber, the secondary balloon being coupled to
a vacuum return lumen to serve as a robust leak containment device and thermal
insulator around the cooling chamber. Various configurations, such as surface
11 modification of the balloon interface, or placement of particles, coatings, or
expandable meshes or coils in the balloon interface, may be employed to achieve
this function.

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